

BATTLEFIELDS

BRITISH
BROADCASTING
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LOADING THE PROGRAMS

There are seven files on this tape.

TITLE	the BBC Publications logo
INTRO	the BATTLEFIELDS title picture
WTRLOO	the WATERLOO title sequence
WTRGAME	the main WATERLOO game
CIVWAR	the CIVIL WAR title sequence
CIVGAME	the main CIVIL WAR game
COPIER	tape-to-disc transfer program

To play WATERLOO rewind the tape to the beginning and type:

```
*TAPE  
PAGE=&E00  
CHAIN ""
```

To play CIVIL WAR wind the tape to the beginning of the CIVWAR file and type the commands above.

If your tape-recorder is not motor-controlled, remember to stop the tape as soon as the main program has been loaded in.

If you want to use the files from disc, see the tape-to-disc copier notes on page 2.

These programs will also run on the Electron and on the 6502 second processor.

The listings

The programs can be loaded and listed, but for memory reasons have been 'crunched'. You can 'uncrunch' them using a utility program. One such utility is among those supplied in the *Toolbox* package by Ian Trackman (BBC Publications, 1983).

TAPE-TO-DISC COPIER

After the CIVGAME program on this tape, there is a short machine-code program called COPIER. This will copy all the programs on the tape onto a disc.

- 1 Place a blank formatted disc in Drive 0 and press CTRL-BREAK. The screen should be in Mode 7. *Do not* reset PAGE to &E00.
- 2 Position the tape at the right place and type *RUN COPIER.
- 3 When the program has loaded, the 'Searching' message will immediately be displayed.
- 4 Now rewind the tape to the beginning, and then press PLAY on the recorder.
- 5 Wait until the entire tape has played through, i.e. until the COPIER file itself has appeared.

Your programs will then all be on disc. You can run the software by typing CHAIN "TITLE". Alternatively you can *BUILD a !BOOT file (see the *Disc System User Guide* for details of how to do this). If you want to write a menu program, the two games can be started with CHAIN "WTRLOO" and CHAIN "CIVWAR".

The *Battlefields* programs will run from standard disc systems without any problems. They should run on alternative systems (where PAGE can be set to &1900 or less) although they have not been tested on these. They will also run on the 6502 second processor with a greater speed of response.

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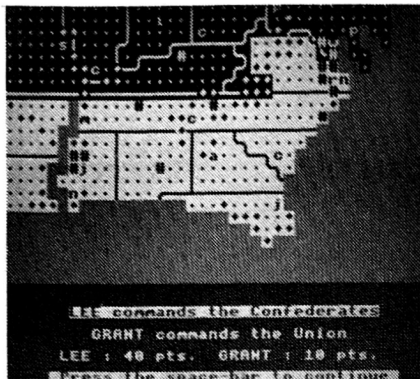
Disclaimer: Because neither the BBC nor the authors have any control over the circumstances of use of the programs, no warranty is given or should be implied as to the suitability of the programs described in this Manual for any particular application. No liability can be accepted for any consequential loss or damage, however caused, arising as a result of the operation of the program.

Title screens prepared by Phillip and Andrew Oliver using EASY ART.

Cover illustration: Brian Robins.

CIVIL WAR

CIVIL WAR is a two-player game in which the Confederate forces engage the Union forces in a diagrammatic representation of the American conflict of 1860-1865.



A typical game will take about one-and-a-half to two hours' playing time.

Each player issues orders to each of his/her 10 units in turn, and in secret. Both players then look at the screen as the computer moves all the forces through all of their orders and calculates the outcome when opposing forces clash, as well as the points gained for territory captured. If neither side has won sufficient points for a victory after one year of the war, play moves on to the next game year and the sequence is repeated.

The game

At the start of the game a map of the south-eastern United States will be displayed. The squares held by the Union forces in the north have a dark blue background; those held by the Confederate forces in the south have a white background. The sea is a light blue.

Some of the land squares show the following additional characteristics:

- # Areas of fortification or other defences which enhance the defensive capability of a unit on that square. These 'hash' squares can also represent towns that are not supply centres but are worthy of inclusion because of their importance. They do not prohibit movement.

- ◆ These represent difficult terrain, including mountains, marshy ground and unnavigable rivers. The diamond squares are not supposed to be totally representative of all the difficult terrain on the map, but they do represent the more tactically significant features, including the Appalachians, the Florida swamps and the northern reaches of the Mississippi. Diamond squares do not aid military potential, but may obstruct movement occasionally, sometimes with dire results.

The rest of the land map squares are divided into:

Dots (open terrain)

State boundary lines (as open terrain)

Supply centres or bases (marked with the appropriate lower-case initial letter). Starting at the top left and moving towards the right across the Union states, these are marked thus:

s St Louis
c Cairo
i Indianapolis
c Cincinnati
w Washington
p Philadelphia

Starting at the left-hand side of the map of the Confederate States and moving to the right across the white area of the map, you will find:

n New Orleans
j Jacksonville
m Memphis
c Chattanooga
a Atlanta
j Jackson
c Columbia
r Richmond
n Norfolk

Supply centres and units

Each of the 10 units (numbered from 0 to 9) has a particular city supply centre upon which it is based. Once the game starts, the units are free to move anywhere on the map, one square at a time, without the need to keep in touch with their supply centre. If, however, a supply centre falls, then any units which are based upon it will be lost and removed from the map and the game. Some supply centres may have only one unit (for example, Union Army No. 9 is based upon St Louis) but other supply centres such as Washington or Richmond may have many forces based upon them, and so their loss can be catastrophic.

Winning

The first side to reach a total of 50 points wins the game. One point is gained each time a unit occupies a square of enemy territory. The background colour of the newly occupied square changes to the colour of the occupying force. As points are gained, so points are lost by the opposing side.

When the game begins, the Confederate forces start with 40 points and the Union forces with 10. This is to reflect the relatively weak political position of the Northern States in the early months of the war. A quick Southern unchecked advance occupying large tracts of Northern territory will almost inevitably bring about a Southern victory. The Northern player will have to try and check the Confederate advance by foreseeing the likely moves and should make a point of invading the South on a reciprocal basis, otherwise the initial total margin of 10 points shown will be quickly lost. (Occupation of sea-grid squares does not gain points.)

The units

Each side starts the game with 10 units. The three units numbered 0, 1 and 2 are fleet units and units numbered 3 to 9 are army units. The strength of each unit varies from mere hundreds to scores of thousands of men. The effective combat potential in each unit is further affected by its morale, which is rated on a scale from 0 to 12. The higher the morale rating, the greater its fighting effectiveness. Morale ratings increase with victory and decrease with a unit's defeat. Losses will be suffered by any unit involved in combat and will mount.

If a unit's strength or morale ever falls to zero it is destroyed and removed from the game and map.

Playing the game

On starting the game, both sides are asked for the names of the respective commanders. All such text messages or questions are displayed at the bottom of the screen. Enter a name of *not more than eight characters* and press RETURN.

The bottom of the screen will now clear and a summary of your names plus the starting points for each side will be printed. Press the space-bar.

Both players now look at the screen while the computer shows the initial strengths, supply centres and dispositions of all units. The units are numbered from 0 to 9 and each unit's corresponding supply centre will flash in turn. Make a note of your opponent's dispositions and supply centres, because you won't get another chance. Of course, if you wish you can agree that each player looks only at the disposition of his or her own forces.

Orders-input stage

The Confederacy inputs its orders first, while the Union player looks away. Each unit is given eight consecutive movement orders selected from the following list:

N North
W West
S South

E East
0 Stand still

There are no orders issued for combat. Combat ensues whenever opposing forces are ordered to occupy the same square of territory, land or sea. All eight consecutive orders *must* be given for each and every unit. If you do not wish a unit to move, type in zero. Examine the map carefully and chart the movements of your units. Remember that your opponent's movements will be carried out simultaneously, even though you each issue orders separately. A square cannot be occupied by more than one unit (but see the description of convoying later). You will thus have to plan each unit's orders with care to avoid a logjam. For example, a unit with an orders-input of WWWW00EN has been ordered to move four squares west – that is, one square to the west on each of four consecutive moves – followed by two 'moves' at a standstill, and then moves of one square to the east and one square to the north.

Fleets may move over any sea-grid square. They may also occupy any coastal square (with territorial and points advantage if the coastal square is enemy territory) providing that the fleet unit's previous position was at sea. This means that for a fleet to capture a stretch of coast, it will have to occupy a coastal square, move out to sea, move back to the next coastal square, and so on.

Note that the Mississippi River consists of sea-grid squares until just north of Memphis. This enables fleets to sail upriver.

Army units may move over any land square but may not move over sea-grid squares (but see convoying below). From a practical point of view, note that a unit may not cross the Mississippi without a supporting fleet.

Convoying

There is one exception to the general rule that no two units may occupy the same square. If you order an army unit onto the same square as that occupied by one of your fleet units, the army unit will be deemed to have been convoyed. Make sure that all the orders issued to the fleet are the same as the orders issued to the army unit. If an army unit is ordered into the sea it will be destroyed. If a fleet is destroyed at sea by enemy action or is forced to retreat, it is likely that any army unit being convoyed will perish.

Note Convoying is a hazardous business. Unless you have practised convoying techniques, it is not a recommended tactic.

A passage across the Mississippi can easily be carried out if a friendly fleet is anchored in the river and the army unit is simply passed onto and through that fleet's square.

Movement in general

Movement off the map by army units is prohibited. Sometimes, if a diamond square has hindered movement, your remaining orders will be out of step with your plans, but the unit will continue to obey your original orders, perhaps with unforeseen results. The only time orders can be revoked is at the orders-input stage by using the DELETE key. Please note that enemy supply centres, cities, or enemy hash squares may randomly prohibit movement in a similar fashion to diamond squares. This is to simulate the fact that an enemy city, even unoccupied by enemy forces, may still possess an inherent defensive capability to hold up an opposing unit's progress.

Once your eight consecutive orders have been entered, press the RETURN key. After all the Confederate forces have received their orders, it is time to change places. The Confederate player looks away while the Union player inputs his or her orders.

Combat

When both players have input their orders they may jointly look at the screen. The computer first deals with the sea orders. It randomly selects any one of each of the three sea orders, then similarly selects an opponent's sea order. It works through the sea orders of both sides in this way, then deals with the land orders of both sides in a similar fashion.

The bottom of the screen will show: the unit's name; the order number (from 1 to 8); the count of the total number of orders/movements so far; and the direction ordered for that unit.

The fleets from both sides are moved first and then the armies. If a unit is unable to move, the computer will indicate this. Other messages, such as information on convoying or the fall of supply centres, will be shown at the bottom of the screen. If a unit is being convoyed, then the screen will show only the fleet unit.

Successful occupation of any enemy square will be 'beeped' over the computer's loudspeaker.

Holding down the space-bar speeds up the action.

When two opposing forces are ordered to the same square, battle is joined. The outcome depends upon the combined strength and morale of each unit and it is quite possible for inferior numbers to defeat a superior force with lower morale. The defending unit has no advantage unless it is upon a hash square or friendly supply centre.

The screen will show this combat advantage by displaying a *double* hash next to the defending unit's name.

A unit that loses a battle may be forced to retreat while the victorious unit occupies its square. The direction of retreat is always the same as that of the attacking direction of the enemy unit. If a unit is forced to retreat onto enemy territory it will be destroyed utterly. This must be

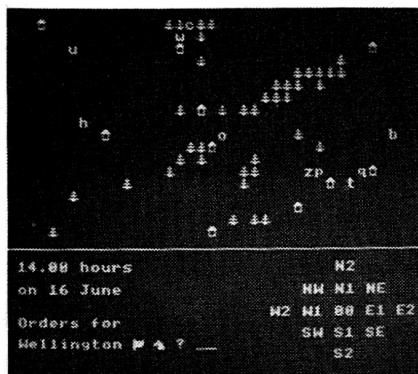
borne in mind when invading enemy territory, since a successful enemy flank attack may result in your annihilation. An army unit forced to retreat to a sea-grid square, or a fleet unit forced to retreat to an illegal land square, will be similarly destroyed. A particularly bad defeat may result in the remaining orders for that unit being cancelled, which will result in no further movement for that unit in the course of that year's campaign.

If a unit is destroyed it will be removed from the game and map.

As combat takes place, both sides will suffer casualties. The strength and morale of units will, however, be replenished at the end of each campaign year.

WATERLOO

This is a two-player game in which the Allies under Wellington fight the final battle against the French under Napoleon. Each player begins by getting a status report on his forces and a report of sightings of the enemy. He/she then gives orders to his/her forces. The computer moves all the forces to their new positions and, if opposing forces are close enough, combat ensues. If sufficient forces are involved in a combat area, a full-scale battle will then follow. After each hour's play the computer will produce a summary of the outcome of the fighting up to that point. Both sides are asked for an appropriate code word of not more than five letters. (Keep this word secret from your opponent.) Press RETURN after entering your code word.



Battle summary

First, the screen will clear. Then a BATTLE SUMMARY will give you the relative strengths of the combatants at the beginning of the game, in points. Note that there are more Allied points than there are French. This is an indication of their numerical superiority. As the game progresses so the points will change according to battle losses. In addition, the French have a small number of points added to their total at the end of each game hour to reflect the Allies' need for a speedy victory. Follow the instructions at bottom of the screen.

Confidential information

When this screen comes up, enter your code word – in secret! Both sides have the same opportunities to move all their forces; but all orders are carried out simultaneously, even though the Allies input their orders first. That is, the computer will not carry out the Allies' orders until the French orders have also been registered. It is important that the whole of

the sequence that follows below is observed by each side in total secrecy! The French player must not look at the screen while the Allied player inputs his or her information, and vice versa.

Status reports

These are set out like this:

UNIT INFNT ARTIL CAVAL MRL

(INFNT stands for infantry, ARTIL for artillery, CAVAL for cavalry, MRL for morale.)

The units

Each side has 10 units referred to by the names of their commanders (e.g. Blucher). The French are an integral group, but the Allied forces are divided into two separate groups, both of which are under the Allied player's control:

1 The Anglo-Dutch forces form the first five units listed (Wellington... Uxbridge).

2 The Prussians form the remainder (Blucher... Bulow).

Some units are leader units (e.g. Wellington and Uxbridge on the Allied side and Napoleon and Ney on the French); these have a small supporting body of cavalry. The presence of leader units on the battlefield increases the overall fighting potential of their friendly forces. In the case of the Allies, both Blucher and Wellington will have this effect whether the forces be Prussian or Anglo-Dutch.

Infantry, Artillery and Cavalry strengths

These figures will, of course, change during the game as losses are accumulated in the course of battle.

Infantry strengths are the heart of each unit, but artillery and cavalry strengths can prove to be the decisive factor.

Artillery takes effect only in the initial stages of a battle, but can cause severe casualties against opposing units with inferior gunpower.

Cavalry has a minimal effect on the outcome of a battle, but its role in intelligence-gathering and increased manoeuvrability is vital (see later).

Morale

The Allied units all start with a morale rating of six points; the French start with seven points. These ratings reflect the efficiency and cohesion of the respective forces, and will change during the game. Morale is

probably the single most important factor governing the fighting strength of each unit. You could, for instance, have a huge numerical strength with a morale of three and be outweighed by your opponent with fewer men but a morale of six. Morale rating decreases each time a unit is forced back or entangled, by a forced retreat, with other units. Once morale drops to zero, the unit ceases to exist.

The orders map

Both sides in turn must look at the map of the scene of battle, which depicts the Waterloo campaign area. Two types of geographical features are represented:

Trees indicate thickly forested ground, which may hinder movement. Whether they do or not is decided by the computer, as umpire, on a random basis. If your unit is 'lost in forests' then it will not be able to move for this game hour. You may have better luck at extricating your unit on the next turn.

Towns (shown by small hut symbols): do not inhibit movement, but do increase the defensive potential of a force, making it more difficult to dislodge (see below).

The reporting stage

Before each side may input their orders, you will see, on-screen, the reports of all units.

Each side sees only its own units and receives information reports according to the following rules:

- 1 If your unit has no cavalry, it sends no information on enemy units.
- 2 If your unit has cavalry, it reports on all enemy units within one square.
- 3 If your unit has more cavalry than the enemy unit it reports the location of all such enemy units within two squares.

Each friendly unit reports in turn and displays its own position on the screen as a lower-case letter. If no opposing units are reported, the next friendly unit makes its report until all units are on the screen map.

At the beginning of the game, the French forces are to the south of the map (i.e. towards the bottom), whereas the Allies are spread between two areas – the Prussians to the south-east, around the town of Ligny, and the Anglo-Dutch all over the centre and north-east of the map. No units are in contact with enemy units at the beginning of the game; therefore, the reporting stage will flash by very rapidly at this point, as

no unit has anything to report. Later, as contacts are made, you will see that any opposing units found will be displayed on the map in 'reverse video'. Remember, the layout of your forces must not be looked at by your opponent. This is a war game played as in real life, where your opponent's moves are a matter for guesswork and conjecture on your part. It is not a board game with both armies displayed openly.

Later, if and when many enemy units are sighted, there may not be enough room on-screen for all of the reports. In that case the display will halt part-way through, waiting for you to press the SHIFT key.

Orders-input stage

When all units have reported in, the bottom of the screen shows the time and date, the orders-input line and a 'moves-compass' (at the bottom right of the screen). Each of your units is now ready to receive orders in turn.

One-by-one, your units flash their lower-case letters on the screen, and the words 'Orders for . . .' will be shown on the bottom-left. Please note that, where possible, the relevant lower-case letter is the initial letter of the full name. There are, however, exceptions (such as, 'q' for Blucher and 'x' for Napoleon).

The orders-input line shows 'Orders for . . .' followed by the unit's name. If it is a leader unit, then a flag will be shown next to it. If the unit consists only of cavalry, a horse's head symbol indicates this. Each game move refers to one hour of campaigning. Each unit may move only one square vertically or horizontally. If a unit consists only of cavalry it may move two squares vertically or horizontally, or one square diagonally.

For example:

Wellington is a cavalry unit, and may move in any of the following directions:

horizontally	W1, W2	E1, E2
vertically	N1, N2	S1, S2
diagonally	NW, NE	SW, SE

Orange contains infantry and artillery, as well as cavalry. It can therefore only move one square vertically and horizontally:

vertically	N1	S1
horizontally	E1	W1

If you wish, you do not have to move at all. Press the zero key twice. Of course, to move in the other directions, type in the two-character abbreviations you see on the moves-compass display. There is no need to press RETURN.

If you make a mistake whilst entering the first of the two letters/digits that make up a command, press DELETE. The computer will acknowl-

edge with 'Orders not understood' and you can re-enter the command. However, you cannot change your mind after you have typed the second digit!

There is no limit to the number of units that may occupy the same square of the map. Similarly, any number of opposing or friendly units may end up on top of each other in the same town, forest or other square. There is no advantage to the Allies in moving first: remember, the computer only actually moves all the units after both sides have issued their orders.

Once all your orders have been issued, the computer analyses your moves and may give one or more messages.

Checking your orders

1 '... orders have gone astray': In real-life battles, orders do sometimes go astray, and the computer makes provision for this, by generating a random chance that units may move in a completely different direction to that given in their orders. Sometimes this will lead to unforeseen combat with the enemy.

2 '... lost in the forest': The computer will make a random decision on a unit getting bogged down in heavily forested country. If you move onto a forest square, you may be lucky and be able to advance on your next turn; or you may be stuck there for any number of moves. This applies whether you have moved onto a forest square voluntarily or have been forced to retreat into the forest by enemy action. Be careful about moving onto a forest square when in the Full battle mode (see page 15), as you may not be able to move out of the forest in the next game hour.

Once the computer is happy with your orders, it will display 'All movement orders checked'. At the conclusion of the Allies' orders-input, the players change places and the French receive reports and input their orders, while the Allied player looks away.

Checking for contact with the enemy

After both players' orders have been input and checked, it is time for both players to look at the screen and see what effect, if any, their moves have on the course of battle.

If no engagement or engagements result, play reverts to the confidential inputting of code words and battle orders, or both players make new moves for the next hour of game-time.

Contact made

If opposing units clash on the same square or on neighbouring squares, then the computer displays the message 'Contact made' and shows the crossed-swords symbols on the squares where the engagement is taking

place. Other units on both sides will be brought into the engagement if they are within one square of the unit which made the initial contact. In this way, it is quite possible for a single unit to set off a large-scale engagement involving many adjacent units.

Start of combat

As both players continue to look at the screen, the names and strengths of the opposing units caught up in the battle are displayed. If the hut symbol is shown next to a name, that unit's strength is enhanced since it is fighting from within a town. If the flag symbol is shown next to a unit, a commander is present and the strength of the entire force is enhanced.

If there are more forces engaged than there is room for on the screen, press the SHIFT key to scroll the screen.

The battle-strength points are not the same as the total Allied or French points but are a reflection of the strengths, morale and other factors of the opposing forces currently in combat.

The engagement begins with two rounds of artillery combat, during which the opposing artillery corps engage each other, inflicting losses on enemy infantry and cavalry where applicable. If there are no artillery components in a combat, the play moves on to the next stage.

After the artillery engagement, one of two things can happen:

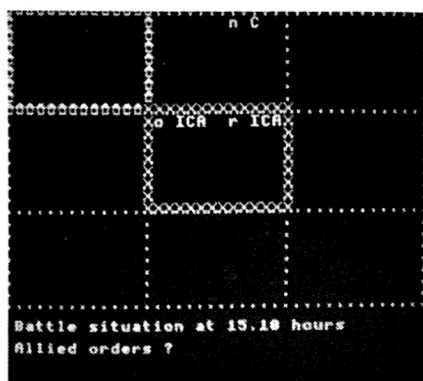
- 1 The opposing units and strengths are of sufficient number to progress to a full-scale battle.
- 2 If insufficient strengths are involved, or the computer deems that the opposing forces are disorganised, play moves on to general skirmishing.

General skirmishing

One or more rounds of general skirmishing may take place as the currently battling forces fight it out. Losses will be inflicted on both sides and the battle-strength points will reflect the course and outcome of the engagement. Once the period of general skirmishing is complete, the screen will display the combat summary.

Combat summary

All opposing units are mentioned, along with reports as to how they fared. If a unit 'holds firm' then its morale is unchanged, and it does not move from its current position. If a unit is forced to retreat, its morale will probably be adversely affected and the unit moves one square north (Allies) or south (French). If the unit is routed its future effectiveness will be severely reduced, and if a unit is destroyed it will never again be displayed on the map.



Full battle mode

When the initial point of contact of two opposing high-strength units is on the same square, rather than an encounter involving two neighbouring squares, then play moves to the battle map. The screen turns red and the next sequence of play involves an expanded view of the battle square and its neighbouring squares. The game moves are now reduced to 10-minute battle-time intervals, so that the following procedure will be run through every 10 minutes during a game-hour.

Confidential information

Both sides in turn now secretly input their code words and examine the strengths of all their units which are involved in the combat zone. Secret information is also relayed on the main map, with all friendly units displayed and a single crossed-sword symbol showing the square where contact has been made. The opposing player's view will, of course, be completely different to your own.

After both sides have secretly examined their information the screen clears to display nine squares of the main map. At this point, both players look at the screen. The central square (with a crossed-sword border) is the main contact square. Other squares may show a border of trees (a forest square from the main map) or a border of hut symbols (a town square from the main map). Within each square information is displayed as to what forces (if any) are in that square.

The Allies are in the left-hand part of the square; the French on the right. You will see the unit's lower-case letter, followed by an upper-case I (if infantry is involved); C (for cavalry); and A (for artillery).

During each 10-minute game-period each side may move one unit one square horizontally or vertically, whether the unit is on or off the battle map. In this way, you can quickly bring re-inforcements into the battle position. Hide the keyboard with one hand so that your opponent cannot see what you're up to! When asked for 'Allied orders?' or 'French orders?' the respective player presses two keys: firstly, the unit letter, then the direction (N,S,E,W). For example, the Allied player secretly pressing W

and S is ordering Wellington (W) one square to the south. All units involved in the central combat square will inflict losses upon all enemy units in the same square. If there are no enemy units in your square, then no combat will take place. If you do not wish to move any units, then type zero (not the letter 'O'). There is no screen confirmation of your input – this is to preserve secrecy!

Note Battle orders *must* be typed in correctly, else they will be taken as orders that have gone astray.

There are, of course, six periods of 10 minutes within the game-hour, so battle losses on the battle map are proportionately greater than in general skirmishing. Use your moves wisely on the battle map, and never get involved in a battle with overwhelmingly superior enemy forces on the same square if you can help it! A planned retreat with a sacrificial rearguard might be to your long-term advantage. The computer will not allow more than one battle-map scenario to be played per game-hour.

At the conclusion of one hour's fighting on the battle map the computer reverts to the combat summary, where reports are given about individual units (see combat summary).

After all combat

It is quite possible that an entire game may progress without a battle map being displayed. Heavy losses can be inflicted on an army during several rounds of general skirmishing and an entire army can become disorganised and routed by a series of disorganised skirmishes. The battle map enables units to become more organised and so inflict heavier losses on the enemy; or, correspondingly, through a set-piece retreat, avoid a larger engagement with perhaps heavier losses. The battle map enables intelligent planning.

Units can be involved in more than one engagement within the game-hour, either when they are forced to retreat and come into contact with fresh enemy units, or when they stand firm and re-engage the same enemy units.

Waterloo itself is to the north of the map, and the strategic crossroads of Quatre-Bras is in the middle of the map, very near Orange's unit. If you look up a campaign map of the Waterloo/Ligny battle area in Belgium, you will see that other important towns such as Nivelles and Wavre are all represented on the computer screen. However, no rivers or roads are shown on-screen; these have been omitted so that the game does not become over-complex to play.

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